Amendment to the Claims:

1. (Currently amended) An analysis apparatus, in particular a spectroscopic analysis apparatus, for analyzing an object comprising:

[[-]] an excitation system for emitting an excitation beam to excite a target region[[,]];

[[-]] a monitoring system comprising a monitoring beam source for emitting a monitoring beam and an imaging system to image the target region[[,]];

[[-]] a detection system for detecting scattered radiation from the target region generated by the excitation beam[[,]];

[[-]] focusing means for focusing the excitation system, the monitoring system and the detection system on a detection plane in the target region[[,]];

[[-]] image processing means for processing an image of the detection plane acquired by the monitoring system to determine ~~determining~~ image characteristics of the image of the detection plane including at least one of a spatial dimension characteristic, a spatial frequency characteristic, and an image contrast characteristic, which indicate if the imaging system is focused on the object to be analyzed[[,]] ~~from a detected image~~[[,]]; and

[[-]] auto-focusing means for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to image the target region and for controlling the image processing means to determine the image characteristics ~~from a detected image~~ until the object substantially lies in the detection plane.

2. (Previously presented) An analysis apparatus as claimed in claim 1, wherein said image processing means are adapted for determining the amplitudes of spatial frequencies corresponding to typical characteristics of the object from a detected image and wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for

controlling the image processing means to determine the image characteristics from a detected image until the determined amplitudes of spatial frequencies are maximally.

3. (Previously presented) An analysis apparatus as claimed in claim 2, wherein said analysis apparatus is adapted for in vivo analysis of blood and wherein said image processing means are adapted for determining the amplitudes of spatial frequencies corresponding to typical diameters of blood vessels from a detected image.

4. (Previously presented) An analysis apparatus as claimed in claim 1, wherein said image processing means are adapted for determining the maximum contrast present in a detected image and/or at one or more image portions corresponding to the object or object portions and wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the determined contrast is maximally.

5. (Previously presented) An analysis apparatus as claimed in claim 4, wherein said analysis apparatus is adapted for in vivo analysis of blood and wherein said image processing means are adapted for determining the maximum contrast present in a detected image between blood and surrounding tissue, in particular at the edges of blood vessels.

6. (Previously presented) An analysis apparatus as claimed in claim 4, wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the

determined the intensity of one or more pixels in the detected image show an extremum.

7. (Previously presented) An analysis apparatus as claimed in claim 4, wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the spread in intensity of pixels in the detected image is maximally.

8. (Previously presented) An analysis apparatus as claimed in claim 4, wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the average intensity difference between neighboring pixels in the detected image is maximally.

9. (Previously presented) An analysis apparatus as claimed in claim 4, wherein said auto-focusing means are adapted for controlling the focusing means to change the focusing of the monitoring system, the excitation system and the detection system based on the determined image characteristics, for controlling the monitoring system to repeatedly image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the absolute intensity difference between neighboring pixels in the detected image is maximally.

10. (Previously presented)An analysis apparatus as claimed in claim 1, wherein the monitoring system is adapted for orthogonal polarized spectral imaging, in particular for bichromatic orthogonal polarized spectral imaging.

11. (Currently amended) An analysis method, in particular a spectroscopic analysis method, for analyzing an object comprising ~~the steps of~~:

[[-]] emitting an excitation beam by an excitation system to excite a target region[[,]];

[[-]] emitting a monitoring beam by a monitoring system to image the target region by an imaging system[[,]];

[[-]] detecting scattered radiation from the target region generated by the excitation beam by a detection system[[,]];

[[-]] focusing the excitation system, the monitoring system and the detection system on a detection plane in the target region ~~by a focusing means~~[[,]];

[[-]] image processing an image of the detection plane acquired by the imaging system to determine ~~determining~~ image characteristics of the acquired image of the detection plane, which indicate if the imaging system is focused on the object to be analyzed[[,]] ~~from a detected image~~[[,]]; and

[[-]] controlling the focusing ~~means to change the focusing~~ of the monitoring system, the excitation system and the detection system based on the determined image characteristics, controlling the monitoring system to image the target region, and controlling the image processing ~~means~~ to determine the image characteristics from a detected image until the object substantially lies in the detection plane.

12. (Currently amended) An optical focusing system for focusing on a target point of an object, comprising:

[[-]] a target system to be focused on the target point[[,]];

[[-]] a monitoring system comprising a monitoring beam source for emitting a monitoring beam and an imaging system to image the target region[[,]];

[[-]] focusing means for focusing the target system and the monitoring system on a detection plane in the target region[[,]];

[[-]] image processing means for determining image characteristics for an image of the detection plane acquired by the imaging system, which indicate if the imaging system is focused on the object to be analyzed[[,]] ~~from a detected image~~[[,]]; and

[[-]] auto-focusing means for controlling the focusing means to change the focusing of the monitoring system and the target system based on the determined image characteristics, for controlling the monitoring system to image the target region and for controlling the image processing means to determine the image characteristics from a detected image until the object substantially lies in the detection plane.

13. (Previously presented) An optical tracking system as claimed in claim 12, wherein said target system comprises a light beam generation means for emitting a light beam, in particular a laser for emitting a laser beam, to be focused on the target point of the object.

14. (Original) An optical tracking system as claimed in claim 12, adapted for use in the field of laser surgery, laser cutting, laser welding, laser shaving, photodynamic therapy, radio therapy, remote sensing and target and tracking.

15. (New) An analysis apparatus as claimed in claim 1, wherein the excitation system and the detection system cooperatively define a Raman spectroscopy device.

16. (New) An analysis apparatus as claimed in claim 1, wherein the excitation system comprises a first light source and monitoring beam source for emitting a monitoring beam of the monitoring system comprises a second light source different from the first light source.

17. (New) An analysis method as set forth in claim 11, wherein the image characteristics of the acquired image of the detection plane include a spatial dimension or spatial frequency characteristic.

18. (New) An analysis method as set forth in claim 11, wherein the image characteristics of the acquired image of the detection plane include an image contrast characteristic.

19. (New) An optical focusing system as set forth in claim 12, wherein the image characteristics determined for the image of the detection plane acquired by the imaging system include a spatial dimension or spatial frequency characteristic.

20. (New) An optical focusing system as set forth in claim 12, wherein the image characteristics determined for the image of the detection plane acquired by the imaging system include an image contrast characteristic.